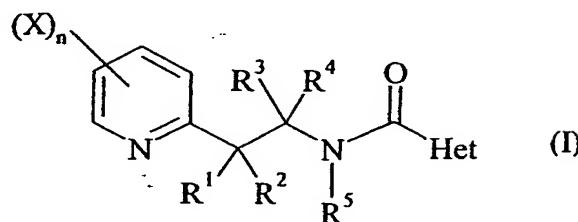


CLAIMS

## 1. A compound of general formula (I) :



in which :

- n is 1, 2, 3 or 4;
- X is the same or different and is a halogen atom, a nitro group, a cyano group, a hydroxy group, an amino group, a sulfanyl group, a pentafluoro- $\lambda^6$ -sulfanyl group, a formyl group, a formyloxy group, a formylamino group, a carboxy group, a carbamoyl group, a N-hydroxycarbamoyl group, a carbamate group, a (hydroxyimino)-C<sub>1</sub>-C<sub>6</sub>-alkyl group, a C<sub>1</sub>-C<sub>8</sub>-alkyl, a C<sub>2</sub>-C<sub>8</sub>-alkenyl, a C<sub>2</sub>-C<sub>8</sub>-alkynyl, a C<sub>1</sub>-C<sub>8</sub>-alkylamino, a di-C<sub>1</sub>-C<sub>8</sub>-alkylamino, a C<sub>1</sub>-C<sub>8</sub>-alkoxy, a C<sub>1</sub>-C<sub>8</sub>-halogenoalkoxy having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>8</sub>-alkylsulfanyl, a C<sub>1</sub>-C<sub>8</sub>-halogenoalkylsulfanyl having 1 to 5 halogen atoms, a C<sub>2</sub>-C<sub>8</sub>-alkenyloxy, a C<sub>2</sub>-C<sub>8</sub>-halogenoalkenyloxy having 1 to 5 halogen atoms, a C<sub>3</sub>-C<sub>8</sub>-alkynyloxy, a C<sub>3</sub>-C<sub>8</sub>-halogenoalkynyloxy having 1 to 5 halogen atoms, a C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, a C<sub>3</sub>-C<sub>8</sub>-halogenocycloalkyl having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>8</sub>-alkylcarbonyl, a C<sub>1</sub>-C<sub>8</sub>-halogenoalkylcarbonyl having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>8</sub>-alkylcarbamoyl, a di-C<sub>1</sub>-C<sub>8</sub>-alkylcarbamoyl, a N-C<sub>1</sub>-C<sub>8</sub>-alkyloxycarbamoyl, a C<sub>1</sub>-C<sub>8</sub>-alkoxycarbamoyl, a N-C<sub>1</sub>-C<sub>8</sub>-alkyl-C<sub>1</sub>-C<sub>8</sub>-alkoxycarbamoyl, a C<sub>1</sub>-C<sub>8</sub>-alkoxycarbonyl, a C<sub>1</sub>-C<sub>8</sub>-halogenoalkoxycarbonyl having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>8</sub>-alkylcarbonyloxy, a C<sub>1</sub>-C<sub>8</sub>-halogenoalkylcarbonyloxy having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>8</sub>-alkylcarbonylamino, a C<sub>1</sub>-C<sub>8</sub>-halogenoalkylcarbonylamino having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>8</sub>-alkylaminocarbonyloxy, a di-C<sub>1</sub>-C<sub>8</sub>-alkylaminocarbonyloxy, a C<sub>1</sub>-C<sub>8</sub>-alkyloxycarbonyloxy, a C<sub>1</sub>-C<sub>8</sub>-alkylsulphenyl, a C<sub>1</sub>-C<sub>8</sub>-halogenoalkylsulphenyl having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>8</sub>-alkylsulphinyloxy, a C<sub>1</sub>-C<sub>8</sub>-halogenoalkylsulphinyloxy having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>6</sub>-alkoxyimino, a (C<sub>1</sub>-C<sub>6</sub>-alkoxyimino)-C<sub>1</sub>-C<sub>6</sub>-alkyl, a (C<sub>1</sub>-C<sub>6</sub>-alkenyloxyimino)-C<sub>1</sub>-C<sub>6</sub>-alkyl, a (C<sub>1</sub>-C<sub>6</sub>-alkynloxyimino)-C<sub>1</sub>-C<sub>6</sub>-alkyl, a (benzyloxyimino)-C<sub>1</sub>-C<sub>6</sub>-alkyl, a benzyloxy, a benzylsulfanyl, a benzylamino, a phenoxy, a phenylsulfanyl or a phenylamino;

-  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are the same or different and are a hydrogen atom, a halogen atom, a cyano group, a hydroxy group, an amino group, a sulfanyl group, a formyl group, a formyloxy group, a formylamino group, a carboxy group, a carbamoyl group, a N-hydroxycarbamoyl group, a carbamate group, a (hydroxyimino)- $C_1$ - $C_6$ -alkyl group, a  $C_1$ - $C_8$ -alkyl, a  $C_1$ - $C_8$ -halogenoalkyl having 1 to 5 halogen atoms, a  $C_2$ - $C_8$ -alkenyl, a  $C_2$ - $C_8$ -alkynyl, a  $C_1$ - $C_8$ -alkylamino, a di- $C_1$ - $C_8$ -alkylamino, a  $C_1$ - $C_8$ -alkoxy, a  $C_1$ - $C_8$ -halogenoalkoxy having 1 to 5 halogen atoms, a  $C_1$ - $C_8$ -alkylsulfanyl, a  $C_1$ - $C_8$ -halogenoalkylsulfanyl having 1 to 5 halogen atoms, a  $C_2$ - $C_8$ -alkenyloxy, a  $C_2$ - $C_8$ -halogenoalkenyloxy having 1 to 5 halogen atoms, a  $C_3$ - $C_8$ -alkynyloxy, a  $C_3$ - $C_8$ -halogenoalkynyloxy having 1 to 5 halogen atoms, a  $C_3$ - $C_8$ -cycloalkyl, a  $C_3$ - $C_8$ -halogenocycloalkyl having 1 to 5 halogen atoms, a  $C_1$ - $C_8$ -alkylcarbonyl, a  $C_1$ - $C_8$ -halogenoalkylcarbonyl having 1 to 5 halogen atoms, a  $C_1$ - $C_8$ -alkylcarbamoyl, a di- $C_1$ - $C_8$ -alkylcarbamoyl, a N- $C_1$ - $C_8$ -alkyloxycarbamoyl, a  $C_1$ - $C_8$ -alkoxycarbamoyl, a N- $C_1$ - $C_8$ -alkyl- $C_1$ - $C_8$ -alkoxycarbamoyl, a  $C_1$ - $C_8$ -alkoxycarbonyl, a  $C_1$ - $C_8$ -halogenoalkoxycarbonyl having 1 to 5 halogen atoms, a  $C_1$ - $C_8$ -alkylcarbonyloxy, a  $C_1$ - $C_8$ -halogenoalkylcarbonyloxy having 1 to 5 halogen atoms, a  $C_1$ - $C_8$ -alkylcarbonylamino, a  $C_1$ - $C_8$ -halogenoalkylcarbonylamino having 1 to 5 halogen atoms, a  $C_1$ - $C_8$ -alkylaminocarbonyloxy, a di- $C_1$ - $C_8$ -alkylaminocarbonyloxy, a  $C_1$ - $C_8$ -alkyloxycarbonyloxy, a  $C_1$ - $C_8$ -alkylsulphenyl, a  $C_1$ - $C_8$ -halogenoalkylsulphenyl having 1 to 5 halogen atoms, a  $C_1$ - $C_8$ -alkylsulphanyl, a  $C_1$ - $C_8$ -halogenoalkylsulphanyl having 1 to 5 halogen atoms, a  $C_1$ - $C_8$ -alkylsulphonyl, a  $C_1$ - $C_8$ -halogenoalkylsulphonyl having 1 to 5 halogen atoms, a benzyloxy, a benzylsulfanyl, a benzylamino, a phenoxy, a phenylsulfanyl or a phenylamino, a phenyl group, a phenyl sulphanyl group;

or  $R^1$  and  $R^2$  may form together a cyclopropyl, a cyclobutyl, a cyclopentyl or a cyclohexyl;

with the proviso that when three of the four substituents  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are a hydrogen atom, then the fourth substituent is not a hydrogen atom;

-  $R^5$  is a hydrogen atom, a cyano group, a formyl group, a hydroxy group, a  $C_1$ - $C_6$ -alkyl, a  $C_1$ - $C_6$ -halogenoalkyl having 1 to 5 halogen atoms, a  $C_1$ - $C_6$ -alkoxy, a  $C_1$ - $C_6$ -halogenoalkoxy having 1 to 5 halogen atoms, a  $C_3$ - $C_6$ -cycloalkyl, a  $C_3$ - $C_6$ -halogenocycloalkyl having 1 to 5 halogen atoms, a  $C_2$ - $C_6$ -alkenyl, a  $C_2$ - $C_6$ -alkynyl, a  $C_1$ - $C_6$ -alkoxy- $C_1$ - $C_6$ -alkyl, a  $C_1$ - $C_6$ -cyanoalkyl, a  $C_1$ - $C_6$ -aminoalkyl, a  $C_1$ - $C_6$ -alkylamino- $C_1$ - $C_6$ -alkyl, a di- $C_1$ - $C_6$ -alkylamino- $C_1$ - $C_6$ -alkyl, a  $C_1$ - $C_6$ -alkylcarbonyl, a  $C_1$ - $C_6$ -halogenoalkylcarbonyl having 1 to 5 halogen atoms, a  $C_1$ - $C_6$ -alkyloxycarbonyl, a  $C_1$ - $C_6$ -benzyloxycarbonyl, a  $C_1$ - $C_6$ -alkoxy- $C_1$ - $C_6$ -alkylcarbonyl, a  $C_1$ - $C_6$ -alkylsulfonyl or a  $C_1$ - $C_6$ -halogenoalkylsulfonyl having 1 to 5 halogen atoms;

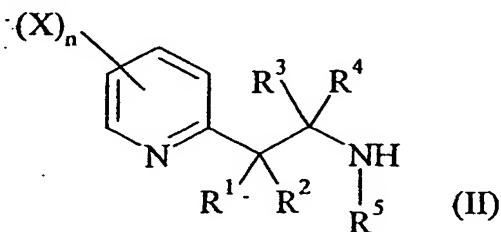
- Het represents 5-, 6- or 7-membered heterocycle with one, two or three heteroatoms which may be the same or different; Het being linked by a carbon atom and being at least substituted in ortho position;  
as well as its salts, N-oxydes, metallic and metalloidic complexes.

2. A compound according to claim 1, characterised in that n is 1, 2 or 3.
3. A compound according to claim 1 or 2, characterised in that at least one of the X substituent is a halogen atom, a C<sub>1</sub>-C<sub>8</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxyimino, a (C<sub>1</sub>-C<sub>6</sub>-alkoxyimino)-C<sub>1</sub>-C<sub>6</sub>-alkyl, or a C<sub>1</sub>-C<sub>6</sub>-alkoxy-C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl.
4. A compound according to any of the claims 1 to 3, characterised in that the 2-pyridyl is substituted in 3-, 5- and/or in 6-position.
5. A compound according to any of the claims 1 to 4, characterised in that R<sup>1</sup> and R<sup>2</sup> are chosen, independently of each other, as being a hydrogen atom, a halogen atom, a cyano group, a hydroxy group, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-halogenoalkyl having 1 to 5 halogen atoms, a C<sub>2</sub>-C<sub>6</sub>-alkenyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-alkylsulfanyl, a C<sub>1</sub>-C<sub>6</sub>-alkylsulfenyl, a C<sub>1</sub>-C<sub>6</sub>-alkylsulfinyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyl, a C<sub>1</sub>-C<sub>6</sub>-alkylcarbonylamino, a C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonyloxy, a C<sub>1</sub>-C<sub>6</sub>-alkoxycarbonylamino or a phenyl group.
6. A compound according to claim 5, characterised in that R<sup>1</sup> and R<sup>2</sup> are chosen, independently of each other, as being a halogen atom, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-halogenoalkyl having 1 to 5 halogen atoms or a C<sub>1</sub>-C<sub>6</sub>-alkylcarbonylamino.
7. A compound according to any of the claims 1 to 6, characterised in that R<sup>3</sup> and R<sup>4</sup> are chosen, independently of each other, as being a hydrogen atom, a halogen atom, a cyano group, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-halogenoalkyl having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>6</sub>-alkylcarbonylamino or a phenyl group.
8. A compound according to claim 7, characterised in that R<sup>3</sup> and R<sup>4</sup> are chosen, independently of each other, as being a halogen atom, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-halogenoalkyl having 1 to 5 halogen atoms or a phenyl group.
9. A compound according to any of the claims 1 to 8, characterised in that R<sup>5</sup> is a hydrogen atom or a C<sub>3</sub>-C<sub>7</sub>-cycloalkyl.

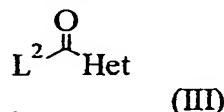
**10.** A compound according to any of the claims 1 to 9, characterised in that Het is a five membered ring heterocycle.

11. A compound according to any of the claims 1 to 9, characterised in that Het is a six membered ring heterocycle.

12. A process for the preparation of a compound of general formula (I) as defined in any of the claims 1 to 11, which comprises reacting a 2-pyridine derivative of general formula (II) or one of its salt :



in which X, n, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are as in any of the preceding claims; with a carboxylic acid derivative of the general formula (III)

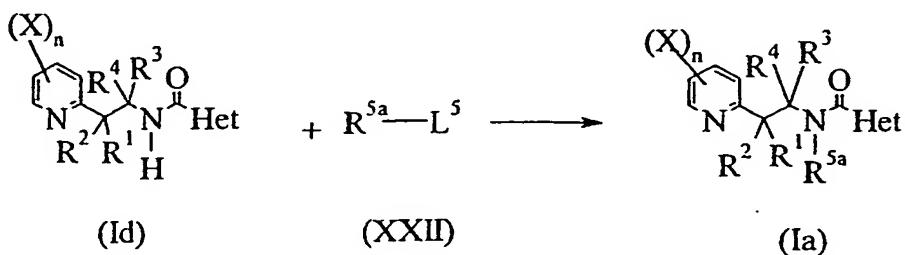


in which :

- Het is as defined in any of the preceding claims ; and
  - $L^2$  is a leaving group chosen as being a halogen atom  $-OR^6$ , -OCOR<sup>6</sup>, R<sup>6</sup> being a C<sub>1</sub>-C<sub>6</sub> alkyl, a C<sub>1</sub>-C<sub>6</sub> haloalkyl, benzyl, pentafluorophenyl or a group of formula  $\begin{array}{c} O \\ || \\ O-Het \end{array}$  ;

in the presence of a catalyst and, if  $L^2$  is a hydroxyl group, in the presence of a condensing agent.

13. A process according to claim 12, characterised in that R<sup>5</sup> is a hydrogen atom and that the process is completed by a further step according to the following reaction scheme :



in which : - R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, X, n and Het are as defined in any of the claims 1 to 15;

- R<sup>5a</sup> is a cyano group, a formyl group, a hydroxy group, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-halogenoalkyl having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-halogenoalkoxy having 1 to 5 halogen atoms, a C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, a C<sub>3</sub>-C<sub>6</sub>-halogenocycloalkyl having 1 to 5 halogen atoms, a C<sub>2</sub>-C<sub>6</sub>-alkenyl, a C<sub>2</sub>-C<sub>6</sub>-alkynyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy-C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-cyanoalkyl, a C<sub>1</sub>-C<sub>6</sub>-aminoalkyl, a C<sub>1</sub>-C<sub>6</sub>-alkylamino-C<sub>1</sub>-C<sub>6</sub>-alkyl, a di-C<sub>1</sub>-C<sub>6</sub>-alkylamino-C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl, a C<sub>1</sub>-C<sub>6</sub>-halogenalkylcarbonyl having 1 to 5 halogen atoms, a C<sub>1</sub>-C<sub>6</sub>-alkyloxycarbonyl, a C<sub>1</sub>-C<sub>6</sub>-benzyloxycarbonyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy-C<sub>1</sub>-C<sub>6</sub>-alkylcarbonyl, a C<sub>1</sub>-C<sub>6</sub>-alkylsulfonyl or a C<sub>1</sub>-C<sub>6</sub>-halogenoalkylsulfonyl having 1 to 5 halogen atoms; and

- L<sup>5</sup> is a leaving group chosen as being a halogen atom, a 4-methyl phenylsulfonyloxy or a methylsulfonyloxy;

comprising the reaction of a compound of general formula (Id) with a compound of general formula (XXII) to provide a compound of general formula (Ia).

**14.** A fungicidal composition comprising an effective amount of a compound according to any of the claims 1 to 11 and an agriculturally acceptable support.

**15.** A method for preventively or curatively combating the phytopathogenic fungi of crops, characterised in that an effective and non-phytotoxic amount of a composition according to claim 14 is applied to the plant seeds or to the plant leaves and/or to the fruits of the plants or to the soil in which the plants are growing or in which it is desired to grow them.